

### **REMARKS**

The undersigned wishes to thank the Examiner and her supervisor for their time and courtesy during the telephonic interview that took place on December 16, 2003. The following discussion is intended to constitute a proper recordation of such interview in accordance with MPEP §713.04, and also to provide a full response to the Office Action mailed on October 2, 2003.

The December 16, 2003 discussion focused primarily on the differences between the present invention and U.S. Patent No. 6,210,792 to Seethamraju *et al.* (hereinafter "Seethamraju"), U.S. Patent No. 5,827,607 to Deaner *et al.* (hereinafter "Deaner"), and U.S. Patent No. 6,207,729 to Medoff *et al.* (hereinafter "Medoff"). Applicants have amended the claims to more fully characterize their invention. Applicants submit that the present invention has not been claimed or disclosed in any prior art reference, alone or in combination.

Claims 6 and 17 have been canceled without prejudice to their subsequent reintroduction into this case or their introduction into a related application. Claims 1, 12, and 20 have been amended. Upon entry of this paper, claims 1-5, 7-16, and 18-22 will be pending and under consideration.

Claims 1 and 12 have been amended to more accurately describe the nature of the claimed invention. Claim 20 has been amended to correct its dependency and to correct a grammatical error. Support for amended claim 1 can be found in the originally-filed application at least at page 15, lines 9-15, and in claims 1 and 6 as originally filed. Support for amended claim 12 can be found in the originally-filed application at least at page 15, lines 9-15, and in claims 12 and 17 as originally filed. Applicants submit that the amendments introduce no new matter.

### **Rejection Under 35 U.S.C. §102(a)**

According to the outstanding Office action, claims 1-4, 6-15, and 17-22 presently stand rejected as being anticipated by the teachings of Seethamraju. Applicants have canceled claims 6 and 17, rendering the rejection of these claims moot.

Amended independent claims 1 and 12 are directed toward a composite comprising granulated papermaking sludge and a polymer composition. The paper making sludge granules

contain organic and inorganic materials and have a porous structure. The porosity of the sludge granules enables the polymer to penetrate each granule, forming a mechanical interlock between the sludge and the polymer matrix. The resulting composite possesses improved mechanical properties over existing fiber/polymer composites.

Seethamraju discloses a composite comprising a modified polymer and/or a modified wood fiber. (Seethamraju, col. 4, lines 15-18). The primary source of wood fiber is “the wood fiber by-product of sawing or milling soft woods commonly known as sawdust or milling tailings.” (Seethamraju, col. 8, lines 5-8).

Unlike the papermaking sludge of the current invention, the wood fiber according to Seethamraju is not porous. Seethamraju discloses that “any pore, crevice, crack, passage way, indentation, etc.” that may be present in the wood fiber is filled with thermoplastic material. (Seethamraju, col. 11, lines 10-12). The presence of an occasional pore, crevice, or crack, however, does not make wood fiber a porous material. If wood fiber were a porous material, wood would not be a viable building material for, among other things, the windows and doors discussed in Seethamraju. Furthermore, Seethamraju does not teach or suggest that its composite would be improved by using porous wood fibers. Thus, the papermaking sludge of the present invention is not anticipated by the wood fiber recited by Seethamraju.

Secondary sources of fiber according to Seethamraju include “bamboo, rice, sugar cane, and recycled fibers from newspapers, boxes, computer printouts, etc.” (Seethamraju, col. 8, lines 1-4). Seethamraju does not teach or suggest using these recycled fibers in granulated and porous form. Thus, the papermaking sludge of the present invention is not anticipated by the recycled fibers recited in Seethamraju.

Furthermore, Seethamraju does not teach or suggest a fiber source that is a composite of organic and inorganic materials. Thus, the papermaking sludge of the present invention is not anticipated by any of the fiber sources recited by Seethamraju.

In view of the foregoing, Applicants submit that independent claims 1 and 12, along with claims 2-4, 7-11, 13-15, and 18-22, which depend directly or indirectly therefrom, are not anticipated by Seethamraju. Accordingly, Applicants respectfully request that this rejection be reconsidered and withdrawn.

**Rejection Under 35 U.S.C. §102(b)**

According to the outstanding Office action, claims 1-4, 6-15, and 17-22 presently stand rejected as being anticipated by the teachings of Deaner. Applicants have canceled claims 6 and 17, rendering the rejection of these claims moot.

Deaner discloses a composite comprising a polymer and wood fiber similar to that disclosed in Seethamraju. The primary source of wood fiber is “the wood fiber by-product of sawing or milling soft woods commonly known as sawdust or milling tailings.” (Deaner, col. 6, lines 55-58). Secondary sources of fiber include “bamboo, rice, sugar cane, and recycled fibers from newspapers, boxes, computer printouts, etc.” (Deaner, col. 6, lines 51-54).

For the same reasons discussed above with respect to Seethamraju, Deaner does not teach or suggest a composite containing granulated papermaking sludge comprising organic and inorganic materials and having a porous structure. Accordingly, Applicants submit that independent claims 1 and 12, along with claims 2-4, 7-11, 13-15, and 18-22 which depend directly or indirectly therefrom, are not anticipated by the Deaner. Applicants respectfully request that this rejection be reconsidered and withdrawn.

**Rejection Under 35 U.S.C. §103**

According to the outstanding Office action, claims 5 and 16 presently stand rejected as being unpatentable over Seethamraju in view of Medoff, and also over Deaner in view of Medoff.

As discussed above, Seethamraju does not teach or suggest a composite containing granulated papermaking sludge comprising a composite of organic and inorganic materials and having a porous structure. Neither Medoff nor any other reference cures this deficiency.

Medoff discloses a composite comprising texturized cellulosic or lignocellulosic materials combined with resins. (Medoff, col. 1, lines 23-25, and col. 4, lines 27-28). An example of cellulosic material includes “effluent from paper manufacture.” (Medoff, col. 3, lines 8-10). Unlike the papermaking sludge of the current invention, however, the cellulosic or lignocellulosic materials according to Medoff are not granular and porous. The resin component of the Medoff composite binds to the surface of the exposed fibers (Medoff, col. 6, lines 7-9), so the cellulosic or lignocellulosic materials are texturized (i.e. cut, shredded, sheared, ground,

ripped, etc.) to increase the amount of surface area available to bind to the resin, and thus strengthen the composite material. (Medoff, col. 3, lines 21-33 and 53-56; col. 6, lines 3-7). The cellulosic or lignocellulosic materials, however, are not porous, and simply increasing the surface area of such materials does not increase their porosity. As in Seethamraju and Deaner, there is no opportunity for mechanical interlocking owing to porosity. Medoff does not teach or suggest strengthening its composite by using porous cellulosic or lignocellulosic materials, which would enable the resin to fill and bind to pores within the materials.

Even if the combination proposed by the Examiner were to be made, the present invention, as claimed, still would not be realized because no reference of record discloses or suggests granulated paper sludge comprising a composite of organic and inorganic materials and having a porous structure. The mere fact that a wood fiber according to Seethamraju may contain a pore or crack does not suggest the benefits of porosity, and certainly does not provide motivation to use a completely different material that is, in fact, porous. The mere fact that Medoff utilizes papermaking effluent also does not teach transforming that material into a granulated, porous form. Furthermore, neither reference teaches or suggests a fiber source that is a composite of organic and inorganic materials. No reference of record, alone or in combination, teaches or suggests a composite containing granulated papermaking sludge comprising a composite of organic and inorganic materials and having a porous structure.

In view of the foregoing, Applicants submit that claims 5 and 16 are patentable over Seethamraju in view of Medoff. Accordingly, Applicants respectfully request that this rejection be reconsidered and withdrawn.

For the same reasons cited with respect to Seethamraju and Medoff above, Applicants submit that claims 5 and 16 are also patentable over Deaner in view of Medoff. Applicants respectfully request that this rejection be similarly reconsidered and withdrawn.

**CONCLUSION**

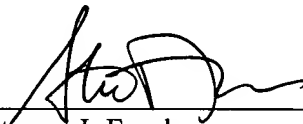
Applicants respectfully request entry of this Amendment and Response and allowance of claims 1-5, 7-16, and 18-22 in due course. The Examiner is invited to contact Applicants' undersigned representative by telephone at the number listed below to discuss any outstanding issues.

Respectfully submitted,

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